Heredity

An International Journal of Genetics

Heredity

Dr L. M. Cook, Manchester (*Editor*)
Dr P. D. S. Caligari, Edinburgh (*Junior Editor*)

Editorial Board

Dr M. G. Bulmer, Oxford (1981–86)
Dr J. S. Gale, Birmingham (1981–86)
Dr C. Smith, Edinburgh (1981–86)
Professor W. Scharloo, Utrecht (1981–86)
Dr G. Dover, Cambridge (1982–87)
Dr J. Barrett, Cambridge (1983–88)
Dr R. A. D. Cameron, Birmingham (1983–88)
Dr M. Hayward, Abervstwyth (1983–88)
Dr T. J. Crawford, York (1984–89)
Professor J. L. Jinks, Birmingham (1984–89)
Dr G. A. Parker, Liverpool (1984–89)
Dr J. S. Parker, London (1984–89)
Dr J. W. Snape, Cambridge (1984–89)
Dr N. H. Barton, London (1985–90)
Professor D. S. Falconer, Edinburgh (1985–90)
Dr J. S. Jones, London (1985–90)
Mr G. R. Mackay, Edinburgh (1985–90)

Heredity

Edited by

L. M. Cook
Manchester

P. D. S. Caligari
Edinburgh

An International Journal of Genetics
founded in 1947 by C D Darlington and R A Fisher
and now owned by the Genetical Society of Great Britain

Volume 54

1985

Longman

PRINTED IN GREAT BRITAIN BY
J. W. ARROWSMITH LTD., BRISTOL

Heredity

Volume 54 Number 1 February 1985

Guillermo Thode, Vicente Giles and M. Carmen Alvarez
Multiple Chromosome Polymorphism in *Gobius paganellus* (Teleostei, Perciformes) 3

Paul M. Brakefield and P. G. Willmer
The basis of thermal melanism in the ladybird *Adalia bipunctata*: Differences in reflectance and thermal properties between the morphs 9

David T. Parkin and Stephen R. Cole
Genetic differentiation and rate of evolution in some introduced populations of the House Sparrow, *Passer domesticus*, in Australia and New Zealand 15

Robin E. Owen
The opportunity for polymorphism and genic variation in social Hymenoptera with worker-produced males 25

Margarida L. R. de Aguiar-Perecin and Canio G. Vosa
C-banding in maize. II. Identification of somatic chromsomes 31

Paul Eggleston
Variation for aggression and response in the competitive interactions of *Drosophila melanogaster* 43

Henk van Dijk
Allozyme genetics, self-incompatibility and male sterility in *Plantago lanceolata* 53

C. M. Cahalan and C. Gliddon
Genetic neighbourhood sizes in *Primula vulgaris* 65

Brian Charlesworth and Deborah Charlesworth
Genetic variation in recombination in *Drosophila*. I. Responses to selection and preliminary genetic analysis 71

Brian Charlesworth and Deborah Charlesworth
Genetic variation in recombination in *Drosophila*. II. Genetic analysis of a high recombination stock 85

M. A. Ford and Q. O. N. Kay
The genetics of incompatibility in *Sinapis arvensis* L. 99

John A. Allen
The genetics of streaked and unstreaked morphs of the snails *Achatina sylvatica* Putzeys and *Limicolaria cailliaudi* (Pfeiffer) 103

R. K. Butlin and T. H. Day
Adult size, longevity and fecundity in the seaweed fly, *Coelopa frigida* 107

Guido Martini and Richard Flavell
The control of nucleous volume in wheat, a genetic study at three developmental stages 111

H. S. Pooni, J. L. Jinks and J. F. F. de Toledo
Predicting and observing the properties of second cycle hybrids using basic generations and inbred line x F_1 crosses 121

M. J. Lawrence, D. F. Marshall, V. E. Curtis and C. H. Fearon
Gametophytic self-incompatibility re-examined: a reply 131

David L. Mulcahy and Gabriella Bergamini Mulcahy
Gametophytic self-incompatibility or the more things change... 139

Volume 54 Number 2 April 1985

Donald A. Levin and Keith Clay
Extraneous pollen advantage in *Phlox cuspidata* 145

R. J. Post
Sex chromosome evolution in *Simulium erythrocephalum* (Diptera: Simuliidae) 149

Klaus Hägele and Helmut Speier
Selection of *thummi* specific chromosome regions in the progeny of *Chironomus thummi thummi* × *Chironomus thummi piger* hybrids after long term culturing as a consequence of gonadal sterility 159

E. M. Borrino, P. D. S. Caligari, W. Powell, I. H. McNaughton and A. M. Hayter
Cytological observation on the effects of pollen irradiation in diploid and polyploid crops 165

R. S. Callow
Comments on Bennett's model of somatic chromosome disposition 171

Peter D. Taylor
Sex ratio equilibrium under partial sib mating 179

M. W. Shaw and G. M. Hewitt
The genetic control of meiotic drive acting on the B-chromosome of *Myrmeleotettix maculatus* (Orthoptera: Acrididae) 187

Rodolfo Costa, Loredana Nigro, Viviana Cambissa, Suresh D. Jayakar, Laura Zonta and John A. Beardmore
Selection in highly inbred populations of *Drosophila melanogaster* polymorphic at a single locus 195

P. A. Parsons and A. A. Hoffmann
Habitat marking: Parallel genetic divergence in two *Drosophila* species 203

P. Hyytia, P. Capy, J. R. David and R. S. Singh
Enzymatic and quantitative variation in European and African populations of *Drosophila simulans* 209

Robb F. Leary, Fred W. Allendorf, Kathy L. Knudsen and Gary H. Thorgaard
Heterozygosity and developmental stability in gynogenetic diploid and triploid rainbow trout 219

Jill Curtis and C. F. Curtis
Homostyle primroses re-visited. I. Variation in time and space 227

J. Cabrero and J. P. M. Camacho
A spontaneous interchange heterozygote mosiac in the grasshopper *Stauroderus scalaris*: interchromosomal chiasma effects 235

J. Hughes and A. J. Richards
Isozyme inheritance in diploid *Taraxacum* hybrids 245

A. H. Abdel-Rehim, S. E. R. Bailey and L. M. Cook
Non-visual differences between colour morphs of the polymorphic snail *Arianta abustorum* 251

H. S. Pooni and J. L. Jinks
Retrospective selection and sources of superior inbreds amongst pedigree inbred families of *Nicotiana rustica* 255

W. Powell, P. D. S. Caligari, J. L. Jinks and A. M. Hayter
The use of doubled haploids in barely breeding. I. Comparison of H1 and H2 generations 261

R. K. Butlin and T. H. Day
Genic and karyotypic selection on an inversion polymorphism in the seqweed fly, *Coelopa frigida* 267

Paul M. Brakefield and Arie J. van Noordwijk
The genetics of spot pattern characters in the meadow brown butterfly *Maniola jurtina* (Lepidoptera: Satyrinae) 275

W. Powell and P. D. S. Caligari
Irradiated pollen selfs in cultivars of *Hordeum vulgare* 285

Volume 54 Number 3 June 1985

D. P. F. King
Enzyme heterozygosity associated with anatomical character variance and growth in the herring (*Clupea harengus* L.) 289

John R. Gold and H. James Price
Genome size variation among north american minnows (Cyprinidae). 1. Distribution of the variation in five species 297

A. J. Wright
Diallel designs, analyses, and reference populations 307

Terry D. Beacham and Ruth E. Withler
Heterozygosity and morphological variability of chum salmon (*Oncorhynchus keta*) in southern British Columbia 313

Russell Lande
The fixation of chromosomal rearrangements in a subdivided population with local extinction and colonization 323

D. P. Fox and J. L. Santos
N-bands and nucleolus expression in *Schistocerca gregaria* and *Locusta migratoria* 333

W. Powell, W. T. B. Thomas, P. D. S. Caligari and J. L. Jinks
The effects of major genes on quantitatively varying characters in barley 1. The GP *ert* locus 343

W. Powell, P. D. S. Caligari, W. T. B. Thomas and J. L. Jinks
The effects of major genes on quantitatively varying characters in barley 2. The *denso* and daylength response loci 349

P. D. S. Caligari, W. Powell and J. L. Jinks
The use of doubled haploids in barley breeding 2. An assessment of univariate cross prediction methods 353

John H. McDonald
Size-related and geographic variation at two enzyme loci in *Megalorchestia californiana* (*Amphipoda*: *Talitridae*) 359

Araceli Fominaya and Nicolas Jouve
Analysis of centromere co-orientation in intervarietal hybrids of common wheat (*Triticum aestivum* L.), by means of C-banding 367

A. G. M. Gerats, S. P. C. Groot and F. Bianchi
Cis-regularion and sporogenic reversion frequency of a new mutable *anl* allele in *Petunia hybrida* 373

P. R. Shewry, S. Parmar and T. E. Miller
Chromosomal location of structural genes for the M_r 75,000 γ-secalins in *Secale montanum* Guss: evidence for a translocation involving chromosomes 2*R* and 6*R* in cultivated rye (*Secale cereale* L.) 381

E. Viseras and J. P. M. Camacho
The B chromosome system of *Omocestus bolivari*: changes in B-behaviour in M_4-polysomic B-males 385

R. F. O. Kemp
Gene segregation in the two-spored basidiomycete *Coprinus bilantus* 391

H. S. Pooni and J. L. Jinks
Predicting the properties of first cycle inbreds and second cycle hybrids extractable from two, three and four parent crosses 397

Book Reviews 412

Books Received 416

Genetical Society Abstracts (16th and 17th November 1984 Meeting) 417